DOCKET NO TO-99-370

DIRECT TESTIMONY OF WILLIAM C. DEERE

SOUTHWESTERN BELL TELEPHONE COMPANY

BACKGROUND

Q. PlEASe state your name and business address.

A. William C. Deere, One Bell Plaza, Room 2312, Dallas, Texas 75202.

Q. By whom are you employed and what is your position?

A. I am employed by Southwestern Bell Telephone Company ("SWBT") a subsidiary of SBC Communications Inc. ("SBC"). My position is Executive Director-Planning and Engineering for SWBT, Pacific Bell and Nevada Bell.

Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES?

A. I participate in the development, planning, and engineering of telephone networks of SWBT, Pacific Bell and Nevada Bell, and act as the regulatory and legislative liaison concerning network issues in the seven states served by those companies. My responsibilities include the presentation, explanation and justification of the company's network plans before regulatory and legislative authorities. I also provide technical support to the Legal and External Affairs departments.

Q. HAVE YOU PREPARED AN APPENDIX THAT SUMMARIZES YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE?

A. Yes. Appendix 1, which is attached to my testimony, summarizes my educational background and work experience. It also includes a list of the dockets and other cases where I have filed direct testimony and/or appeared before the

based technologies. This is due to the interference issues discussed above. Loops exist in a binder group within a cable. While some binder groups could support one DSL-based technology alongside other services, a different DSL-based technology on the same pair in that same binder group may cause interference. This occurs whenever multiple service providers share the same limited resources. Effective use of those resources - and the PSTN - requires identifying the types of technologies used, the effect of those technologies, and then managing the PSTN to maximize service availability. Copper loops can be conditioned and managed to support multiple technologies, but only if those technologies are defined, inventoried, and managed according to appropriate spectrum management guidelines.

Q. Please describe the spectrum management plan that SWBT plans to use in missouri.

A. The spectrum management plan that SWBT is beginning to implement uses the principles of Binder Group Management (BGM). BGM isolates digital services, such as T-1 and ADSL, and attempts to place all of these services within discreet sections, known as binder groups, of the outside plant cable. An outside plant cable typically contains a grouping of twisted copper pairs within a 25 pair binder. These 25 pair binders are subsets of the entire cable. As an example, a 600 pair copper cable would consist of twenty-four binders (600 / 25) each containing 25 individual copper pairs. As discussed earlier in my testimony, these digital "interferers" reduce the operating range of ADSL loops within an individual binder. By placing these digital interferes in a common binder group, and separating these binders from other binders in the cable, complete binder groups can be created that contain none of these interferers.

The goal of SWBT is to move in the direction of having specific binders for repeated T-1s, and have a group of binders for ADSL (as well as POTS). All other digital services would be spectrum managed within the remaining binder groups.

B

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of AT&T Communications of the Southwest, Inc.'s Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Southwestern Bell Telephone Company.	)	Case No. TO-97-40
In the Matter of the Petition of MCI Telecommunications Corporation and Its Affiliates, Including MCImetro Access Transmission Services, Inc., for Arbitration and Mediation Under the Federal Telecommunications Act of 1996 of Unresolved Interconnection Issues With Southwestern Bell Telephone Company.	)	Case No. TO-97-67

FINAL ARBITRATION ORDER

Issue Date: July 31, 1997

Effective Date: August 20, 1997

and does not consider the fact the an electronic ordering system will be available in the near future. Also, many of the activities described in this NRC cost study are the same activities described in the NRC cost study for the Service Order Charge. When the time required for both the Service Order and Simple Conversion are combined, the result is **__** minutes to process the order. Staff does not believe that it is reasonable for a mechanical process to require **__** minutes to simply transfer one customer to another CLEC. Finally, is the issue of the Wholesale Marketing and Services expenses included in the Common Cost Allocator. Including Wholesale Marketing and Services expense in both the Common Cost Allocator and the NRCs will result in a double recovery and should not be allowed.

The issue of which company is responsible for identifying the types of services a customer has and which network elements are required to serve a customer was brought to our attention by SWBT. SWBT proposes that the CLECs ordering the UNEs through a Simple Conversion to be responsible for specifying which services the customer has and the elements that are necessary to serve that customer. SWBT contends that it does not want to be responsible for identifying which elements are required to serve a particular customer. The Commission's Arbitration Order permits "as is" customer changes but does not address the issue of specifying the necessary UNEs. The issue of "as is" customer changes was not an interim decision and was not addressed by Staff in this review. The issue of specifying which UNEs a particular customer requires was not specified in the Arbitration Order requiring the Staff Cost Study Review. However, Staff would like to bring this issue to the Commission's attention. Staff feels it would be appropriate to require the CLEC to specify exactly which elements it wishes to purchase. This would relieve SWBT from the duty and potential liability of making that determination.

Conclusion

Given that SWBT's estimation of these NRCs is based solely upon the opinions of SME's and the fact that at least a portion of these NRCs are recovered through the cost factors applied to the UNEs, Staff cannot recommend that the Commission accept the NRCs proposed by SWBT. Staff also cannot recommend the Commission accept AT&T/MCI's argument that 100 percent of the NRCs are reflected in the monthly UNE rates and there should be no NRCs. To the extent, the competitors create new or additional labor for SWBT, that labor will not be reflected in the historic cost factors. Staff believes there will be some additional NRCs associated with UNEs, but the extent of which is unknown.

Unfortunately, other than the $5.00 Service Order Charge and the CLEC Simple Conversion, Staff has no data to suggest an alternative that is based upon adequate data. Staff believes the issue becomes one of a burden of proof. If the burden of proof is upon SWBT to justify the proposed NRCs, Staff feels SWBT has failed. If the burden of proof is upon the competitor, Staff believes that AT&T and MCI have failed to provide a reasonable alternative.

The alternative that Staff proposes would be for the Commission to set the rates for the

NRCs at one-half of the rates proposed by SWBT. Given that neither party presents a complete and convincing position, Staff believes this is the best solution we can propose.

C

Costing and Pricing Report, Volume 2

Case No. TO-98-115

Presented to the Missouri Public Service Commission
from the Arbitration Advisory Staff

July 24, 1998

NP

Table of Contents

INTRODUCTION

On September 10, 1997 AT&T Communications (AT&T) filed a petition for a second round of arbitration with Southwestern Bell Telephone (SWBT), which established Case No. TO-98-115. Officials from AT&T and SWBT met with members of Missouri Public Service Commission's Arbitration Advisory Staff (Staff) in the month of November to mediate and arbitrate outstanding issues. During the mediation/arbitration process, several issues regarding rates for services and unbundled network elements (UNEs) were presented. Both parties agreed to let the Staff review SWBT's cost studies and recommend modifications to the Commission to set permanent rates. On December 23, 1997, the Missouri Public Service Commission (MoPSC) issued a Report and Order in Case No. TO-98-115, In the Matter of AT&T Communications of the Southwest, Inc.'s Petition for Second Compulsory Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Southwestern Bell Telephone Company. This Order indicated SWBT was to allow the Staff to review the remaining cost studies. Staff met with SWBT and AT&T officials to discuss the UNEs and cost studies. The report is organized as follows: Proposed Rates, Summary of Modifications, and Summary of Cost Studies.

The Staff reviewed cost studies on elements that were not arbitrated in TO-97-40/TO-97-63. The first section includes a list of modifications Staff recommends. With these modifications, SWBT's costs will become based on TELRIC.

The second section of the report contains the prices proposed by Staff, SWBT, and AT&T. At this time, the proposed prices from Staff are estimates and should be used for discussion purposes only. Staff was able to determine the appropriate rates for all NRCs. Since Staff did not have the resources to produce cost studies for UNEs, Staff requested SWBT rerun its cost studies with Staff's recommendations. Until SWBT has completed revising the cost studies, it has provided estimates of the impact of Staff modifications to the prices. Staff will file the new cost studies later in June. As soon as those are reviewed by Staff, they will be presented to the Commission as an addendum. Final prices for the remaining issues in Case No. TO-98-115 can then be set.

The third section contains a review of the studies and models used to generate the prices for unbundled network elements (UNE) and services. This section contains the review of SWBT's cost studies as well as a detailed description of Staff's proposed modifications and the rationale for making the modifications. The companies have been requested to respond to Staff's proposals, as soon as Staff receives the responses, they will be presented to the Commission. In each instance, Staff discussed the areas of concern and the proposed change with SWBT officials and AT&T officials to obtain their input. A summary matrix of Staff's, AT&T's, and SWBT's positions will be presented to the Commission as an addendum.

Most of the cost studies were for NRCs. Like NRCs in Case No. TO-97-40/67, Staff recommends cutting SWBT's proposed rates in half. This recommendation is based on the fact that neither side has presented solid evidence to support its claims that the labor effort required is as long as SWBT claims or is as short as AT&T claims. It is also based on the fact that neither side can prove that the NRCs are recovered through the recurring charges or that the NRCs are not recovered through the recurring charges. Where the companies gave better evidence to support their side of the issue, Staff was able to make different recommendations to the NRCs. The different recommendations impact the service order cost studies. For some of the service order cost studies, Staff felt that AT&T's argument was more logical in a forward looking environment.

The fourth section describes AT&T's non-recurring cost model (NRCM). This model was developed from the input of subject matter experts on labor needed to complete a job and the labor rates associated with different level employees. At this time, Staff cannot recommend using this model to develop costs for SWBT. Staff finds four reasons for which it cannot support the NRCM: 1) The model is a work in progress and the current version does not find costs for all elements or services; 2) The model is based on subject matter expert (SME) estimates; 3) Staff does not know the extent of how much of the NRCs are recovered through the monthly recurring charges; and 4) This cost review is based on purchasing UNEs of SWBT's network. Therefore, like the cost review in Case No. TO-97-40/67, Staff opted to recommend modifying SWBT's cost studies.

SECTION I.
SUMMARY OF MODIFICATIONS

This section summarizes Staff recommended modifcations to SWBT's cost studies. The modifications are broken down by cost study category. The bolded type denotes the cost category and the italicized type denotes a specific cost study. The global modifications are all taken from Case No. TO-97-40/67. A full summary of those modifications may be found in the Costing and Pricing Report in that case. The remainder of the list is the modifications to the specific cost studies involved in this arbitration. Further explanation of the modifications may be found in the corresponding section of the report.

Global

All changes recommended in Case No. TO-97-40/67:

- Cost of Capital should be 10.36%.
- Depreciation lives should be Commission specified lives from TO-97-40/67.
- Income tax should be 38.36%.
- There should be no application of inflation.
- Removal of CC/BC ratio from the numerator and denominator of the Building factor in ACES.
- Historic building and grounds maintenance factor to be consistent with changing the building factor.
- Any other applicable modifications staff recommended in TO-97-40/67 that apply to the cost studies in dispute in this arbitration.
- No application of common cost to any NRCs.
- Use of four rate zones.

Crossconnects

Unbundled 4-wire DS-1 Loop Cross-Connect to Multiplexer

- Global modifications.

Unbundled Crossconnects to DCS and Switch Ports

- Global modifications.

CLEC to SS7 STP

- Global modifications.

Local Switching Features – Analog and ISDN

- SWBT has proposed a $5.00 per order service charge for every order that generates a service order on a mechanized basis, which is inconsistent with the Final Arbitration Order in TO-97-40/67. Staff believes the $5.00 service order charge applies to as is conversion for resale or UNEs, not for other services or features. Staff's position is also supported in section 3.6 of Appendix Pricing-

UNE of the AT&T/ SWBT interconnection agreement.

- 5 minutes per feature or combination of features. Hunting arrangements should include ½ of the currently proposed Recent Change Memory Administration Center (RCMAC) time. Neither side has presented solid evidence to suggest other labor times. Staff believes that there should be a different rate for hunting features since a little extra labor effort is required to program the number sequence.
- Use 0.05 fallout factor on all features. This factor is to account for automation of the service order process and is based on current flow through estimates from SWBT officials during OSS demonstrations. This factor also represents the need for manual intervention on orders that are normally automated. Staff assumes five percent of orders will need correction or clarification through manual intervention. In other words, the factor represents the percentage of orders that require manual intervention when all others flow through electronically to completion with no problems. Thus, 5 percent of all orders will require manual intervention and 95 percent will flow through with no problems.
- All other applicable global modifications.

Unbundled Call Trace Per Activation

- The rate for local switching port features should apply here. Staff does not believe there is a need for different port feature charges. For an explanation see the recommendation under **Local Switching Features – Analog and ISDN**. The rate should apply per port and per successful trace.

Direct Inward Dialing

- Both parties agreed to a rate for DID. No changes are recommended other than applicable global modifications.

Unbundled PRI Port Features

- Neither side presented an adequate argument since their inputs are based on SME estimates. Staff believes that port feature activation for PRI is more involved than analog or BRI port features because of its complex nature, so more time will be spent activating the features. However, neither side has evidence to support its claims. Therefore, Staff recommends implementing global modifications and that SWBT's rates be cut in half.

Unbundled BRI CSV/CSD / Unbundled BRI Port Features

- See local switching feature modifications. Staff believes there is no difference between activating BRI features and activating other local switching features, therefore the same rates for local switching features should apply to BRI port features. For an explanation see the recommendation under **Local Switching Features – Analog and ISDN.**

Unbundled Centrex-Like Features -- Analog/ISDN

- See local switching feature modifications. Staff believes there is no difference between activating Centrex-like features and activating other local switching features, therefore the same rates will apply. For an explanation see the recommendation under **Local Switching Features -- Analog and ISDN.**

Unbundled Dedicated Transport

Entrance Facilities

- Any changes to the Loopvest model recommended in Case No. TO-97-40/67 must be reflected in the entrance facility cost studies. Entrance facilities are part of the interoffice transport. Cost studies for entrance facilities were included in the Dedicated Transport cost studies SWBT submitted. Specifically, Staff recommended the use of loop samples specific to DS1 and DS3, which are the two entrance facility types SWBT determined costs for.
- OC-X entrance facilities should be ICB priced.
- Global modifications.
- NRCs should be cut in half to be consistent with the treatment of other UNEs in TO-97-40/67.

LIDB

- Any changes made to CCSCIS and the signaling cost studies from TO-97-40/67 that impact the LIDB studies should be made to the cost study:

  STP Utilization:
  A link - 46.13125%
  C link - 12.9%
  D link - 40.47%
  SCP link - 18.76%
  800 DB queries - 286
  LIDB queries - 30.25
  CNAM queries - 359.37
  10% port growth per year
  10% BH queries/second growth per year
- Any applicable global modifications.
- SWBT calculated the update cost incorrectly for initial and ongoing updates. The rates should be equal for both types of updates. Double check the math in this calculation.
- Service order charge is an NRC and should be cut in half to be consistent with other the treatment of other NRCs.

Access to DA Database

- Staff recommends DA database access be priced ICB until SWBT can make an estimate of the forward looking cost.

Branding/Rating

- Staff recommends that the lowest intercompany compensation arrangement currently in effect be used for the price for both of these services.

Simple Service Conversion - Resale

- The rates for simple service conversion should be the service conversion rates specified in TO-97-40/67: $5.00 per conversion for an as is conversion.

Complex Service Conversion Charge - Resale

- For Complex Service Conversion orders, Staff assumes that all Complex conversions will require manual intervention. Since both AT&T and SWBT rely on SME estimates of labor times to process orders, and neither party has solid evidence to support their side, Staff recommends cutting SWBT's labor rates in half and removing inflation from the cost study.

Unbundled Service Order - UNEs

Simple

- -These UNE conversions are considered to be automated.
- -Remove negotiation cost (only time for typing remains).
- -Use fallout factor of 0.05.
- -All other applicable global modifications.

Complex

- -These UNE conversions are considered to require manual intervention.
- -Negotiation costs cut in half -- these remain, however, the CLEC will have done most of the work to identify what the needs are for the service requested.
- -Typing costs cut by 75% to 15 minutes since the CLEC will have done most of the work.
- -CPU/EXCP costs cut in half to be consistent.
- -All other global modifications.

Dark Fiber

- Global modifications.
- NRCs cut in half.

NXX Migration

- Neither side has presented an effective argument to justify that there is a substantial cost associated with NXX migration or that all costs will be recovered internally through migrating a NXX. Staff recommends making any applicable global modifications and cutting the rate in half.

White Pages

- Include 4 rate zones instead of three for consistency with other modifications.
- Staff does not recommend modifying the cost studies beyond applicable global modifications.

LSP Emergency Contact

- Any applicable global modifications.

Other Issues

- Staff agrees with SWBT on the issues related to costs associated for DCS access and multiplexing. However, Staff does not agree with SWBT's proposed costs for reasons described in this report and in the Costing and Pricing Report for Case No. TO-97-40/67. Staff recommends SWBT alter its dedicated transport cost studies with all applicable modifications described in TO-97-40/67.

Plexar Custom

- Contracts were provided for Staff's review.

Service Order Clarification

Staff believes it would be useful to the parties if the Commission clarified the application of service order charges. Staff offers the following scenarios as to how the service orders charges should apply.

1. As is UNE conversion -- Loop and line side port combination only

	Recurring	NRC
2-wire analog Loop Recurring (Group A)	$33.29	
Port Recurring	$2.47	
As is conversion charge		$5.00
Total	**$35.76**	**$5.00**

Local switching/tandem switching charges apply and are dependent upon MOU.

2. New service -- loop, line side port, and cross connect to CLEC collocated equipment with call waiting

	Recurring	NRC
2-wire analog Loop Recurring (Group C)	$18.23	$26.07
2-wire analog line side port Recurring	$2.25	$39.37
2-wire analog crossconnect w/o testing	$0.31	$19.96
Call Waiting		$ 0.18
New Service Charge		$ 2.11
Total	**$20.79**	**$87.69**

Local switching/tandem switching charges apply and are dependent upon MOU.

3. Customer currently has service through facilities and requests call waiting, caller ID, and call forwarding combination.

	Recurring	NRC
Feature activation charge for combination		$0.18(Staff estimate)
Customer change charge		$2.09
Total		**$2.27**

4. Total Services Resale - residential - as-is conversion -- 19.2 percent discount

	Recurring	NRC
Rate Group A	$6.11	
Conversion Charge		$5.00
Total	**$6.11**	**$5.00**
Rate Group D, MCA-2	$10.10	
Conversion Charge		$5.00
Total	**$10.10**	**$5.00**

Under resale service, tariffed rates less the 19.2 percent discount apply.

5. As is UNE conversion -- Loop and line side port combination -- customer requests call waiting.

	Recurring	NRC
2-wire analog Loop Recurring (Group A)	$33.29	
Port Recurring	$2.47	
Feature Activation -- Call waiting		$0.18
As is conversion charge		$5.00
Total	**$35.76**	**$5.18**

Local switching/tandem switching charges apply and are dependent upon MOU.

6. As is conversion -- 10 miles of DS-1 dedicated transport in Rate Group B

	Recurring	NRC
Dedicated transport, first mile	$86.96	
Additional miles	9 * $1.67	
Service Order charge		$54.29
Total	**$101.99**	**$54.29**

7. New service -- 10 miles of DS-1 dedicated transport in Rate Group B

	Recurring	NRC
Dedicated transport, first mile	$86.96	$184.84
Additional miles	9 * $1.67	$184 + 8*118.14
Service Order charge		$105.20
Total	**$101.99**	**$1,419.16**

D

Exhibit No:
Issues: Network
Witness: Larry Wren
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Southwestern Bell Telephone Company
Case No: TO-99-370

SOUTHWESTERN BELL TELEPHONE COMPANY

CASE NO. TO-99-370

REBUTTAL TESTIMONY

OF

Larry Wren

Dallas, Texas

April 1999

Q. PLEASE DESCRIBE HOW YOU DEVELOPED THE TIME ESTIMATES YOU PROVIDED TO MR. MOORE.

A. Based upon my outside plant experience, I formulated my estimates by separating the loop conditioning into two functions. The first part is the engineering function, which includes the time it takes for the OSP engineer to look at the cable records and the plant location records to prepare the information that goes on the work order. The estimated time for the engineer to prepare the work order for the removal of load coils and bridged tap is 2 hours. The time to prepare the work order for the removal of a repeater is one hour. The reason there is a time difference between the work order for load coils, bridge tap, and a repeater is that there will usually be multiple load coils and bridged tap on a loop that the engineer will check for in the outside plant records, whereas the repeater usually appears at one location..

Once the engineer prepares the work order, it is given to the drafting clerk to draw. The estimated time for the clerk to draw the job is 30 minutes. The completed work order is then issued to the Construction department to work the order.

The second function is the construction phase. It involves the following activities:

Arrive at the job site:

- The cable technician receives the order and familiarizes him or herself with the work print and what tools and materials he/she will need to perform the work.

- The cable technician travels to the job site and sets up the work area for safety and traffic control.
- In an underground environment (manhole), the cable technician will clear the manhole of gases, water, etc. before entering the manhole. In a buried environment, the cable technician will have to call for a cable locate, dig a splice pit, and prepare the cable for opening. In an aerial environment, the cable technician will have to set up work area protection and request a bucket truck in order to access the aerial cable.

Conditioning the cable pair:

- In an underground environment, the cable technician will identify the cable being accessed before conditioning the cable pair. This may require re-racking the cables in order to access the necessary cable. Once the cable is identified and accessed, the splice case will be accessed and the load coil, repeater, or bridged tap will be removed and tested before the splice case is reinstalled. Most underground cables have air inside the cable sheath, which creates an additional step for the cable technician to monitor the cable while the work is being performed. The air pressure inside the cable sheath keeps the water out of the splice case, so it is important that the cable technician monitor the cable during the work operation.
- In a buried environment, the cable technician will build a rack for the cable being conditioned. Again the splice case will be removed and the load coil, repeater, or bridged tap will be removed and tested. Once this

task is performed. the cable technician will prepare the cable for a new cable sealant before replacing the splice case.

- In an aerial environment, the cable technician will need a bucket truck or a splicing platform to access the cable. The cable technician will remove the splice case, remove the load coil, repeater, or bridged tap, test the cable pair, and replace the splice case. Again, in some cases, the cable technician may have to maintain air pressure on the cable while performing the work operation. The estimated time for the cable technician to remove load coils is 12 hours because there are multiple (usually 3 or more) load coils at different locations on the loop which requires the cable technician to physically move from one location to another. Estimated time for bridged tap and repeater removal is 4 hours. The difference is that the cable technician does not require as much set up time to remove bridge tap and repeaters because he/she is not having to handle large amounts of cable pairs.
- A break down of the cable technician's time is as follows:
- Accessing the cable: 2 hours (includes travel time, set up work area protection, and accessing the cable)
- Splicing time: 1 hour (includes opening the splice case, accessing the cable pairs, and closing the splice case.)
- Close down time:1 hour (includes removing work area protection and travel time)

E

Exhibit E - Calculation of xDSL NRCs

NRC Re-Calculation - Remove Load Coil		Technician Minutes	Engineering Minutes	Drafting Minutes	
Original SWBT Estimate of Work Time		720	120	30	
Sprint Proposed Work Time - Remove Load In UG Cable	50%	240	30	0	
Sprint Proposed Work Time - Remove Load In Ae Cable	25%	60	30	0	
Sprint Proposed Work Time - Remove Load In Bu Cable	25%	60	30	0	
Weighted Average Work Time Per Load Coil		150	30	0	
Total time for 2 Load locations		300	60	0	
Total Cost to Unload 1 Pair - 1 pair at a time		$270.00	$70.00	$0.00	**$340.00**
Additional Work Time work time for unloading 24 more pairs per location		24	0	0	
Total Minutes for Unloading 25 pairs at two locations		48	0	0	
Total Time to Unload 25 Pairs at 2 Locations		348	60	0	
Total Cost for Unloading 25 pairs at two locations		$313.20	$70.00	$0.00	$383.20
Cost per Pair to Unload 25 Pairs at a time in 2 Locations		$12.53	$2.80	$0.00	**$15.33**

NRC Re-Calculation - Remove Bridge Tap		Technician Minutes	Engineering Minutes	Drafting Minutes	Total Cost
Original SWBT Estimate of Work Time - Remove BT		240	120	30	
Original SWBT Estimate of Work Time - Replace BT		240	120	30	
Original SWBT Replace Frequency Adjustment	34%	81.6	40.8	10.2	
Original SWBT Total Work Time		321.6	160.8	40.2	
Sprint Estimate of Work Time - Remove BT @ Serving Terminal	70%	10	20	0	
Sprint Estimate of Work Time - Remove BT @ Splice	30%	50	20	0	
Weighted Average Time to Remove Bridged Tap		22	20	0	
Sprint estimate of cost to remove bridged tap		$19.80	$23.33	$0.00	$43.13
Sprint Estimate of Work Time - Replace BT @ Serving Terminal	70%	10	20	0	
Sprint Estimate of Work Time - Replace BT @ Splice	30%	50	20	0	
Weighted Average Time to Replace Bridged Tap		22	20	0	
Average Time to Replace Bridged Tap Weighted by Replacement Frequency	10%	2.2	2	0	
Sprint Estimate of Cost to Restore Bridged Tap		$1.98	$2.33	$0.00	$4.31
Present Value of Restoration @11.25% and average Service Life of 5 years					$2.53
Weighting Factor for less than 2 pairs assumed in Forward-looking nework (1.5/2)	25%				
Sprint Proposed NRC for Removal of Bridged Tap					**$11.42**

NRC Re-Calculation - Remove Repeater		Technician Minutes	Engineering Minutes	Drafting Minutes	Total Cost
Original SWBT Estimate of Work Time - Remove Repeater		240	60	15	
Sprint Estimate of Work Time - Remove Repeater		50	20	0	
Sprint Proposed NRC to Remove Repeater		$45.00	$23.33	$0.00	**$68.33**

Labor Rates		Technician Rate	Engineering Rate	Drafting Rate
Estimated SWBT Labor Rate		$60.00	$70.00	$40.00
Labor Rate Adjustment to Remove Travel Time (all NRCs Tech time Only)	10%	$6.00	$0.00	$0.00
Adjusted SWBT Labor Rate		$54.00	$70.00	$40.00